

REMARKS

The specification was objected for informalities that have been corrected pursuant to the examiner's requirements. The drawings have been objected to in view of the objections to the specification. The specification having been so appropriately amended transveres the objection to the drawings. Claims 5-14 were rejected for indefinite claiming. Applicant requests reconsideration. The claims 5-14 have been amended pursuant to the examiner's requirements. Claims 9-14 having been so amended are now in condition for allowance, respectfully requested.

Surviving claim 5 was rejected as unpatentable over Phillips, USSR, Hosman, Vogeley or Blass. Claim 6 was rejected as unpatentable over USSR, or Hosman in view of Hettlage. Claim 7 was rejected as unpatentable over Phillips in view of Hettlage. Claim 8 should have been objected to as depending on rejected claim 5. Applicant requests reconsideration.

Applicant extends sincere appreciation for the outstanding search by the examiner locating many relevant patents. Applicant has withdrawn claims 1-4 without prejudice.

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1       The specification teaches:

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3       "The conventional waveguide switch has two selectable position  
4 settings for aligning two curved waveguide section bends  
5 symmetrical about a rotating axis. The curved selectable waveguide  
6 section does not use reflecting surfaces, but rather circular or  
7 rectangular cross section waveguide sections."; "The bent waveguide  
8 section 20 and the straight waveguide section 14 can have either a  
9 square or circular cross section and sized for the frequencies of  
10 interest; and "The waveguide cross sections 14 and 20 remains  
11 unaltered from the antenna feed port 10 to either of the linear  
12 port 22 and the circular port 16. The cross section areas of the  
13 waveguide sections 14 and 20 remain fixed within the selectable  
14 waveguide. Because the waveguide cross section remains unchanged,  
15 no mechanism exists for polarization modifications from antenna  
16 feed port 10 through the waveguide sections 14 and 20 to the ports  
17 22 and 16. Consequently, the waveguide does not degrade  
18 polarization isolation. The waveguide cross sections 14 and 20 may  
19 be square and in this case the signals are propagated on TE01 and  
20 TE10 waveguide modes. The waveguide cross section can also be  
21 circular and the signals 18 and 24 are propagated on orthogonal  
22 TE11 waveguide modes. Hence, the waveguide cross section of the  
23 sections 14 and 20 is preferably preserved throughout the rotating  
24 member 30."

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1       The present inventions have two significant defining  
2 characteristics to solve a particularly problem. The first  
3 characteristics is that the two waveguide sections have a different  
4 shape respecting each other, that is, one section is straight and  
5 the other is bent at 45 degrees. The other characteristic is that  
6 the cross-sectional area of the waveguides must be such that there  
7 is no coupling between orthogonally polarized signals, that is, the  
8 cross-sections are is either circular or square, so that orthogonal  
9 signals may simultaneously propagate through the waveguides without  
10 being distorted by each other and thereby remain isolated from each  
11 other, to thereby solve the undisclosed problem of concurrent  
12 communication of orthogonal signals through either one of the  
13 selectable waveguides. Claim 5 was amended to claim that the shapes  
14 are either straight or bent at ninety degrees, and have cross  
15 sectional area that is either square or circular for enabling the  
16 concurrent communication of orthogonally polarized signals through  
17 the waveguides.

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19       The cited do not solve the problem of providing dual port  
20 routing of concurrently communicated orthogonally polarized  
21 signals. In particular, Hosman discloses a curved waveguide 19,  
22 Lanctot 117' discloses a rectangular waveguide shown clear in  
23 Figure 1, Hettlage discloses a curved waveguide 9, Phillips  
24 discloses curved waveguides 35, 30 and 32, Vogeley shows a  
25 disjointed waveguide 22 and 14 cause distortion of or coupling  
26 between orthogonally polarized signals. Blass discloses a  
27 rectangular cross section of waveguide 6. Tyrrell discloses curved  
28 waveguides 12 and 13. Lanctot 079' discloses rectangular waveguides

1 12 and 13. Miller discloses a rectangular waveguides Y, X1 and X2.  
2 USSR discloses only a single waveguide section. These waveguides  
3 are unsuitable for the solving the problem solved by the present  
4 inventions.

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6 The cited references do not teach nor suggest a switch having  
7 straight and bent waveguides having square or circular cross  
8 sections for routing signals to a pair ports enabling concurrent  
9 communications of orthogonally polarized signals remaining isolated  
10 from each other during concurrent communication through either one  
11 of the waveguides. In this unique configuration, isolated  
12 orthogonally polarized signals can be concurrently communicated and  
13 routed to the selected port without distorting each other. Surely,  
14 the cited references do not teach the problem solved by the present  
15 inventions. Allowance of the claims 5-8 is respectfully requested.

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17  
18 Respectfully Submitted

19 Derrick Michael Reid

20 Derrick Michael Reid

21 CERTIFICATE OF MAILING

22 I, hereby certify that this correspondence is being deposited  
23 in the United States Postal Service in an envelope with First Class  
24 full postal prepaid thereon addressed to: Commissioner of Patent  
25 and Trademarks, Washington D.C. 20231.

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27 Date: 07/07/00

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